NAME OF WORK : IMPROVEMENTS AND RESTORATION OF ROAD IN WARD NO. 05 (PACKAGE 01) (PACKAGE CONSISTS OF 6 WORKS).

Quality Control Reports

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QC ABSTRACT

NAME OF WORK: Improvements and Restoration of Roads in Ward NO. 05 (Package 01) (Package Consists of 6 Works)

SL NO	Item Of Work	Name of Test	Frequency of Test/Quantity	Executed Quantity	Number of Tests Required	Number of Tests Conducted
		Materials				
1	WMM	Sieve Analysis	One Test		1	1
		Impact Value	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
2	BC	SIEVE ANALYSIS	One Test		1	1
		STRIPPING VALUE	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
		IMPACT VALUE	One Test		1	1
		Specific gravity	One Test		1	1
		Water Absorption	One Test		1	1
		Marshal Stability	One Test		1	1
		Marshal flow	One Test		1	1
		Percent air Voids	One Test		1	1
		Percent Voids in mineral	One Test		1	1
		Percent Voids filled with Bitumen	One Test		1	1
		Density	One Test		1	1
		Gradation	One Test		1	1
3	BM	SIEVE ANALYSIS	One Test		1	1
		STRIPPING VALUE	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
		IMPACT VALUE	One Test		1	1
		Specific gravity	One Test		1	1
		Water Absorption	One Test		1	1
		Marshal Stability	One Test		1	1
		Marshal flow	One Test		1	1
		Percent air Voids	One Test		1	1
		Percent Voids in mineral	One Test		1	1
		Percent Voids filled with Bitumen	One Test		1	1
		Density	One Test		1	1
		Gradation	One Test		1	1
4	BITUMEN	Ductility	One Test		1	1
		Softening Point	One Test		1	1
		Penetration	One Test		1	1
		Flash Point	One Test		1	1
		Fire Point	One Test		1	1
5	TACK COAT	Rate of spread	One Test		1	1

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TEST RESULTS OF GRADATION FOR WMM

Lab ID : **CP-RW-2022-12-02-01** **Date: 05-12-22**

Project Name : Improvements and Restoration of Roads in Ward NO. 05 (Package 01) (Package Consists of 6 Works).

Agency : Sri.K.R Santhosh Kumar, No:4, Samrudhi, AVR Block 1st, A Main, Dhanalakshmi Layout, Virupakshapura, Bangalore-560097

Customer Reference : BBMP/EE/BTP/WO/48/2022-23

Date of Receipt : 02-12-22

Type of Mix : WMM (Wet Mix Macadam)

Source of Sample : Durgamba Layout- Amulya Bar Road

Date of test : 02-12-22

Oven Dry Weight : 11000 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	% Cumulative Weight Retained	% Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0.0	100.0	100
45	315	315	2.9	97.1	95-100
22.4	2259	2574	23.4	76.6	60-80
11.2	2179	4753	43.2	56.8	40-60
4.75	2251	7004	63.7	36.3	25-40
2.36	1621	8625	78.4	21.6	15-30
0.6	623	9248	84.1	15.9	8-22
0.075	1338	10586	96.2	3.8	0-5

* The results obtained are satisfactory as per standard requirements.

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TEST REPORT OF AGGEGRATE IMPACT VALUE
IS: 2386 Part IV

Lab ID : CP-RW-2022-12-02-01 **Date: 05-12-22**

Project Name : Improvements and Restoration of Roads in Ward NO. 05 (Package 01) (Package Consists of 6 Works).

Agency : Sri.K.R Santhosh Kumar, No:4, Samrudhi, AVR Block 1st, A Main, Dhanalakshmi Layout, Virupakshapura, Bangalore-560097

Customer Reference : BBMP/EE/BTP/WO/48/2022-23

Date of Receipt : 02-12-22

Type of Mix : Coarse Aggregate for WMM (Wet Mix Macadam)

Source of Sample : Durgamba Layout- Amulya Bar Road

Date of test : 02-12-22

Sl.No	Particulars of observations	Index	TEST 1	TEST 2
1	Total weight of the surface dry sample sample (passing 12.5 mm and retained on 10mm sieve)	A	298.5	298.5
2	Weight of fraction passing 2.36mm sieve After giving 15 blows	B	78.5	74.1
3	weight of fraction retained 2.36mm sieve After giving 15 blows	C	219.4	223.9
4	Total weight of (B+C) is less than the initial weight (Weight A) by more than one gram the result shall be discarded and a fresh test made.	A-(B+C)	0.6	0.5
5	Aggregate impact value	(B/A)*100	26.3	24.8
6	Aggregate impact value (Mean of two tests)	Pecentage	25.6	

* The results obtained are satisfactory as per standard requirements.

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DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE(IS 2386 (Part 1) 1963 (RA 2007)

Lab ID : **CP-RW-2022-12-02-01** **Date: 05-12-22**

Project Name : Improvements and Restoration of Roads in Ward NO. 05 (Package 01) (Package Consists of 6 Works).

Agency : Sri.K.R Santhosh Kumar, No:4, Samrudhi, AVR Block 1st, A Main, Dhanalakshmi Layout, Virupakshapura, Bangalore-560097

Customer Reference : BBMP/EE/BTP/WO/48/2022-23

Date of Receipt : 02-12-22

Type of Mix : Coarse Aggregate for WMM (Wet Mix Macadam)

Source of Sample : Durgamba Layout- Amulya Bar Road

Date of test : 02-12-22

Result:

Index	Percentage of Flakiness and Elongation Index	Specified limits as per MORTH specification table 400-12
Flakiness Index	9.5%	Combined Flakiness & Elongation Index for WMM is Maximum 35%
Elongation Index	10.1%	
Combined Flakiness and Elongation Index for WMM	19.6%	

* The results obtained are satisfactory as per standard requirements.

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TEST RESULTS OF GRADATION FOR WMM

Lab ID : **CP-RW-2022-12-03-01** **Date: 06-12-22**

Project Name : Improvements and Restoration of Roads in Ward NO. 05 (Package 01) (Package Consists of 6 Works).

Agency : Sri.K.R Santhosh Kumar, No:4, Samrudhi, AVR Block 1st, A Main, Dhanalakshmi Layout, Virupakshapura, Bangalore-560097

Customer Reference : BBMP/EE/BTP/WO/48/2022-23

Date of Receipt : 03-12-22

Type of Mix : WMM (Wet Mix Macadam)

Source of Sample : Sukruthi House Road

Date of test : 03-12-22

Oven Dry Weight : 11000 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	% Cumulative Weight Retained	% Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0.0	100.0	100
45	402	402	3.7	96.3	95-100
22.4	2189	2591	23.6	76.4	60-80
11.2	2056	4647	42.2	57.8	40-60
4.75	2165	6812	61.9	38.1	25-40
2.36	1535	8347	75.9	24.1	15-30
0.6	589	8936	81.2	18.8	8-22
0.075	1596	10532	95.7	4.3	0-5

* The results obtained are satisfactory as per standard requirements.

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TEST REPORT OF AGGEGRATE IMPACT VALUE

IS: 2386 Part IV

Lab ID : **CP-RW-2022-12-03-01** **Date: 06-12-22**

Project Name : Improvements and Restoration of Roads in Ward NO. 05 (Package 01) (Package Consists of 6 Works).

Agency : Sri.K.R Santhosh Kumar, No:4, Samrudhi, AVR Block 1st, A Main, Dhanalakshmi Layout, Virupakshapura, Bangalore-560097

Customer Reference : BBMP/EE/BTP/WO/48/2022-23

Date of Receipt : 03-12-22

Type of Mix : Coarse Aggregate for WMM (Wet Mix Macadam)

Source of Sample : Sukruthi House Road

Date of test : 03-12-22

Sl.No	Particulars of observations	Index	TEST 1	TEST 2
1	Total weight of the surface dry sample sample (passing 12.5 mm and retained on 10mm sieve)	A	300.2	300.2
2	Weight of fraction passing 2.36mm sieve After giving 15 blows	B	73.9	74.0
3	weight of fraction retained 2.36mm sieve After giving 15 blows	C	225.9	225.8
4	Total weight of (B+C) is less than the initial weight (Weight A) by more than one gram the result shall be discarded and a fresh test made.	A-(B+C)	0.4	0.4
5	Aggregate impact value	(B/A)*100	24.6	24.7
6	Aggregate impact value (Mean of two tests)	Pecentage	24.6	

* The results obtained are satisfactory as per standard requirements.

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DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE(IS 2386 (Part 1) 1963 (RA 2007)

Lab ID : **CP-RW-2022-12-03-01** **Date: 06-12-22**

Project Name : Improvements and Restoration of Roads in Ward NO. 05 (Package 01) (Package Consists of 6 Works).

Agency : Sri.K.R Santhosh Kumar, No:4, Samrudhi, AVR Block 1st, A Main, Dhanalakshmi Layout, Virupakshapura, Bangalore-560097

Customer Reference : BBMP/EE/BTP/WO/48/2022-23

Date of Receipt : 03-12-22

Type of Mix : Coarse Aggregate for WMM (Wet Mix Macadam)

Source of Sample : Sukruthi House Road

Date of test : 03-12-22

Result:

Index	Percentage of Flakiness and Elongation Index	Specified limits as per MORTH specification table 400-12
Flakiness Index	12.8%	Combined Flakiness & Elongation Index for WMM is Maximum 35%
Elongation Index	12.5%	
Combined Flakiness and Elongation Index for WMM	25.3%	

* The results obtained are satisfactory as per standard requirements.

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TEST RESULTS OF GRADATION FOR WMM

Lab ID	:	**CP-RW-2022-12-03-01** **Date: 06-12-22**
Project Name	:	Improvements and Restoration of Roads in Ward NO. 05 (Package 01) (Package Consists of 6 Works).
Agency	:	Sri.K.R Santhosh Kumar, No:4, Samrudhi, AVR Block 1st, A Main, Dhanalakshmi Layout, Virupakshapura, Bangalore-560097
Customer Reference	:	BBMP/EE/BTP/WO/48/2022-23
Date of Receipt	:	03-12-22
Type of Mix	:	WMM (Wet Mix Macadam)
Source of Sample	:	S P Singh House Road
Date of test	:	03-12-22
Oven Dry Weight	:	11000 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	% Cumulative Weight Retained	% Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0.0	100.0	100
45	425	425	3.9	96.1	95-100
22.4	2056	2481	22.6	77.4	60-80
11.2	1956	4437	40.3	59.7	40-60
4.75	2285	6722	61.1	38.9	25-40
2.36	1469	8191	74.5	25.5	15-30
0.6	1720	9911	90.1	9.9	8-22
0.075	756	10667	97.0	3.0	0-5

* The results obtained are satisfactory as per standard requirements.

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TEST REPORT OF AGGEGRATE IMPACT VALUE
IS: 2386 Part IV

Lab ID	:	**CP-RW-2022-12-03-01** **Date: 06-12-22**
Project Name	:	Improvements and Restoration of Roads in Ward NO. 05 (Package 01) (Package Consists of 6 Works).
Agency	:	Sri.K.R Santhosh Kumar, No:4, Samrudhi, AVR Block 1st, A Main, Dhanalakshmi Layout, Virupakshapura, Bangalore-560097
Customer Reference	:	BBMP/EE/BTP/WO/48/2022-23
Date of Receipt	:	03-12-22
Type of Mix	:	Coarse Aggregate for WMM (Wet Mix Macadam)
Source of Sample	:	S P Singh House Road
Date of test	:	03-12-22

Sl.No	Particulars of observations	Index	TEST 1	TEST 2
1	Total weight of the surface dry sample sample (passing 12.5 mm and retained on 10mm sieve)	A	300.7	300.7
2	Weight of fraction passing 2.36mm sieve After giving 15 blows	B	70.7	73.4
3	weight of fraction retained 2.36mm sieve After giving 15 blows	C	229.5	227.0
4	Total weight of (B+C) is less than the initial weight (Weight A) by more than one gram the result shall be discarded and a fresh test made.	A-(B+C)	0.5	0.3
5	Aggregate impact value	(B/A)*100	23.5	24.4
6	Aggregate impact value (Mean of two tests)	Pecentage	24.0	

* The results obtained are satisfactory as per standard requirements.

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DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE(IS 2386 (Part 1) 1963 (RA 2007)

Lab ID	:	**CP-RW-2022-12-03-01** **Date: 06-12-22**
Project Name	:	Improvements and Restoration of Roads in Ward NO. 05 (Package 01) (Package Consists of 6 Works).
Agency	:	Sri.K.R Santhosh Kumar, No:4, Samrudhi, AVR Block 1st, A Main, Dhanalakshmi Layout, Virupakshapura, Bangalore-560097
Customer Reference	:	BBMP/EE/BTP/WO/48/2022-23
Date of Receipt	:	03-12-22
Type of Mix	:	Coarse Aggregate for WMM (Wet Mix Macadam)
Source of Sample	:	S P Singh House Road
Date of test	:	03-12-22

Result:

Index	Percentage of Flakiness and Elongation Index	Specified limits as per MORTH specification table 400-12
Flakiness Index	13.1%	Combined Flakiness & Elongation Index for WMM is Maximum 35%
Elongation Index	11.5%	
Combined Flakiness and Elongation Index for WMM	24.6%	

* The results obtained are satisfactory as per standard requirements.

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TEST RESULTS OF GRADATION FOR WMM

Lab ID	:	CP-RW-2022-12-05-01	Date: 08-12-22
Project Name	:	Improvements and Restoration of Roads in Ward NO. 05 (Package 01) (Package Consists of 6 Works).	
Agency	:	Sri.K.R Santhosh Kumar, No:4, Samrudhi, AVR Block 1st, A Main, Dhanalakshmi Layout, Virupakshapura, Bangalore-560097	
Customer Reference	:	BBMP/EE/BTP/WO/48/2022-23	
Date of Receipt	:	05-12-22	
Type of Mix	:	WMM (Wet Mix Macadam)	
Source of Sample	:	Pyramid Apartment	
Date of test	:	05-12-22	
Oven Dry Weight	:	11000	Grams

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	% Cumulative Weight Retained	% Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0.0	100.0	100
45	430	430	3.9	96.1	95-100
22.4	2245	2675	24.3	75.7	60-80
11.2	1869	4544	41.3	58.7	40-60
4.75	2145	6689	60.8	39.2	25-40
2.36	1369	8058	73.3	26.7	15-30
0.6	820	8878	80.7	19.3	8-22
0.075	1765	10643	96.8	3.2	0-5

* The results obtained are satisfactory as per standard requirements.

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TEST REPORT OF AGGEGRATE IMPACT VALUE
IS: 2386 Part IV

Lab ID	:	CP-RW-2022-12-05-01	Date: 08-12-22
Project Name	:	Improvements and Restoration of Roads in Ward NO. 05 (Package 01) (Package Consists of 6 Works).	
Agency	:	Sri.K.R Santhosh Kumar, No:4, Samrudhi, AVR Block 1st, A Main, Dhanalakshmi Layout, Virupakshapura, Bangalore-560097	
Customer Reference	:	BBMP/EE/BTP/WO/48/2022-23	
Date of Receipt	:	05-12-22	
Type of Mix	:	Coarse Aggregate for WMM (Wet Mix Macadam)	
Source of Sample	:	Pyramid Apartment	
Date of test	:	05-12-22	

Sl.No	Particulars of observations	Index	TEST 1	TEST 2
1	Total weight of the surface dry sample sample (passing 12.5 mm and retained on 10mm sieve)	A	301.4	301.2
2	Weight of fraction passing 2.36mm sieve After giving 15 blows	B	68.8	72.1
3	weight of fraction retained 2.36mm sieve After giving 15 blows	C	232.1	228.5
4	Total weight of (B+C) is less than the initial weight (Weight A) by more than one gram the result shall be discarded and a fresh test made.	A-(B+C)	0.5	0.6
5	Aggregate impact value	(B/A)*100	22.8	23.9
6	Aggregate impact value (Mean of two tests)	Pecentage	23.4	

* The results obtained are satisfactory as per standard requirements.

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DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE(IS 2386 (Part 1) 1963 (RA 2007)

Lab ID	:	**CP-RW-2022-12-05-01**	**Date: 08-12-22**
Project Name	:	Improvements and Restoration of Roads in Ward NO. 05 (Package 01) (Package Consists of 6 Works).	
Agency	:	Sri.K.R Santhosh Kumar, No:4, Samrudhi, AVR Block 1st, A Main, Dhanalakshmi Layout, Virupakshapura, Bangalore-560097	
Customer Reference	:	BBMP/EE/BTP/WO/48/2022-23	
Date of Receipt	:	05-12-22	
Type of Mix	:	Coarse Aggregate for WMM (Wet Mix Macadam)	
Source of Sample	:	Pyramid Apartment	
Date of test	:	05-12-22	

Result:

Index	Percentage of Flakiness and Elongation Index	Specified limits as per MORTH specification table 400-12
Flakiness Index	9.9%	Combined Flakiness & Elongation Index for WMM is Maximum 35%
Elongation Index	10.4%	
Combined Flakiness and Elongation Index for WMM	20.3%	

* The results obtained are satisfactory as per standard requirements.

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Format No: CP/TF/01

TEST REPORT ON BITUMEN

Lab ID	:	**CP-RW-2022-12-06-01**	**Date: 08-12-22**
Project Name	:	Improvements and Restoration of Roads in Ward NO. 05 (Package 01) (Package Consists of 6 Works).	
Agency	:	Sri.K.R Santhosh Kumar, No:4, Samrudhi, AVR Block 1st, A Main, Dhanalakshmi Layout, Virupakshapura, Bangalore-560097	
Customer's Reference	:	BBMP/EE/BTP/WO/48/2022-23	
Date of Receipt	:	06-12-22	
Sample Type	:	Bitumen	
Reference to BIS codes	:	IS: 1201-2021, IS: 1202-1220(1978) (Reaffirmed-2019)	
Date of test	:	06-12-22	

Test Results

Sl.no	Name of Test	Result	Requirements as per IS:73-2013
1	Penetration at 25°C , in 1/10th mm	**55**	60 to 70
2	Softening Point, °C	**50.2**	Min. 40°C
3	Ductility, cm	**99**	Min. 75cm
4	Flash point, °C	**308**	Min. 220°C
	Fire point, °C	**312**	

* The results obtained are satisfactory as per standard requirements.

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TEST RESULTS OF GRADATION FOR BM
(IS 2386:(Part 1) 1963 (RA2011)

Lab ID	:	CP-RW-2022-12-07-01 **Date: 09-12-22**
Project Name	:	Improvements and Restoration of Roads in Ward NO. 05 (Package 01) (Package Consists of 6 Works).
Agency	:	Sri.K.R Santhosh Kumar, No:4, Samrudhi, AVR Block 1st, A Main, Dhanalakshmi Layout, Virupakshapura, Bangalore-560097
Customer Reference	:	BBMP/EE/BTP/WO/48/2022-23
Date of Receipt	:	07-12-22
Type of Mix	:	BM-Plant (Bituminous Macadam)
Date of test		07-12-22
Weight of Sample(gm)	:	5000

IS Sieve Size(mm)	Weight Retained(gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Specification Limits as per MORTH specification Table 500-7(grading -2)
26.5	0	0	0	100	100
19	170	170	3.4	96.6	90-100
13.2	512	682	13.6	86.4	56-88
4.75	2759	3441	68.8	31.2	16-36
2.36	911	4352	87.0	13.0	4-19
0.3	358	4710	94.2	5.8	2-10
0.075	232	4942	98.8	1.2	0-8
PAN	58	5000	100.0	0.0	0

* The results obtained are satisfactory as per standard requirements.

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PHYSICAL REQUIREMENTS FOR COARSE AGGREGATE FOR BITUMINOUS MACADAM

Lab ID : CP-RW-2022-12-07-01

Date: 10-12-22

Project Name : Improvements and Restoration of Roads in Ward NO. 05 (Package 01) (Package Consists of 6 Works).

Agency : Sri.K.R Santhosh Kumar, No:4, Samrudhi, AVR Block 1st, A Main, Dhanalakshmi Layout, Virupakshapura, Bangalore-560097

Customer Reference : BBMP/EE/BTP/WO/48/2022-23

Date of Receipt : 07-12-22

Type of Mix : BM (Bituminous Macadam)

Date of test : 07-12-22

Table 500-6 : Physical Requirements fo Coarse Aggregate for Bituminous Macadam

Property	Test	Result	Specification	Method of Test
Partical Shape	Flakiness Index	13.8	Combined Flakiness & Elongation Index for BM is Maximum 35%	IS:2386 Part I
	Elongation Index	7.2		
Strength	Aggregate Impact Value	25.2	Maximum 30%	IS:2386 Part IV
Specific gravity	Specific gravity	2.51	Maximum 2.7	IS:2386 Part III
Water Absorption	Water Absorption	0.17	Maximum 2%	IS:2386 Part III

* The results obtained are satisfactory as per standard requirements.

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TEST REPORT OF AGGEGRATE STRIPPING VALUE OF ROAD AGGRGATE (IS:6241)

Lab ID	:	CP-RW-2022-12-07-01
Project Name	:	Improvements and Restoration of Roads in Ward NO. 05 (Package 01) (Package Consists of 6 Works).
Agency	:	Sri.K.R Santhosh Kumar, No:4, Samrudhi, AVR Block 1st, A Main, Dhanalakshmi Layout, Virupakshapura, Bangalore-560097
Customer Reference	:	BBMP/EE/BTP/WO/48/2022-23
Date of Receipt	:	07-12-22
Type of Mix	:	BM(Bitumnous Macadam)
Date of test	:	07-12-22

Date: 10-12-22

Type of Binder	:	60/70
% of Binder Used	:	3.4%
Weight of Aggregate	:	200.0 gm
Weight of Binder	:	6.8 gm
Temperature of water bath	:	40°C

No of test	Retained Stripping Percentage	Stripping Percentage	Average Retained Stripping Percentage	Secified limits as per MORTH specification table 500-8
1	98.0	2.0	98.2	Minimum Retained Coating 95%
2	98.5	1.5		
3	98.0	2.0		

* The results obtained are satisfactory as per standard requirements.

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TESTS RESULTS ON STABILITY OF MIX

Lab ID	:	CP-RW-2022-12-07-01 **Date: 10-12-22**
Project Name	:	Improvements and Restoration of Roads in Ward NO. 05 (Package 01) (Package Consists of 6 Works).
Agency	:	Sri.K.R Santhosh Kumar, No:4, Samrudhi, AVR Block 1st, A Main, Dhanalakshmi Layout, Virupakshapura, Bangalore-560097
Customer Reference	:	BBMP/EE/BTP/WO/48/2022-23
Date of Receipt	:	07-12-22
Type of Mix	:	BM (Bituminous Mecadam)
Date of test	:	07-12-22

The results of the tests conducted on the Bituminous Macadam mix sample are as follow

Sl.No	Particulars of observations	TEST 1	TEST 2	Secified limits as per MORTH specification table 500-11
1	Marshal Stability at 60°C, KN	11.29	11.82	9KN(Min)
2	Marshal flow at 60°C, mm	3.54	3.87	2-4
3	Percent air Voids	4.56	4.17	3-5
4	Percent Voids in mineral Aggregate(VMA %)	14.54	14.76	13-15
5	Percent Voids filled with Bitumen(VFB %)	68.98	70.28	65-75
6	Density, g/cc	2.42	2.40	–

* The results obtained are satisfactory as per standard requirements.

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TEST RESULTS OF BITUMEN BINDAR CONTENT AND GRADATION FOR BM
(IS 2386:(Part 1) 1963 (RA2011)

Lab ID	:	CP-RW-2022-12-13-01 Date: 14-12-22
Project Name	:	Improvements and Restoration of Roads in Ward NO. 05 (Package 01) (Package Consists of 6 Works).
Agency	:	Sri.K.R Santhosh Kumar, No:4, Samrudhi, AVR Block 1st, A Main, Dhanalakshmi Layout, Virupakshapura, Bangalore-560097
Customer Reference	:	BBMP/EE/BTP/WO/48/2022-23
Date of Receipt	:	13-12-22
Type of Mix	:	BM (Bituminous Macadam)
Source of Sample	:	Koustaba House #33
Date of test	:	13-12-22

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	W1	500	500
2	Weight of the sample After extraction	W2	484.5	485
3	Initial weight of Paper	W3	4	4
4	Final weight of Paper	W4	6	6
5	Increase in weight of Filter Paper	W5=W4-W3	2	2
6	Bitumen percentage	$\frac{W1-W2+W5}{W1} \times 100$	3.50	3.40
7	Average percentage	%	3.45	

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Lab ID : CP-RW-2022-12-13-01 Date: 14-12-22

AFTER EXTRACTION(Trail-1)

Weight of Sample : 484.5 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Specification Limits as per MORTH specification Table 500-7(grading -2)
26.5	0	0	0.0	100.0	100
19	38	38	7.8	92.2	90-100
13.2	147	185	38.2	61.8	56-88
4.75	191	376	77.6	22.4	16-36
2.36	28	404	83.4	16.6	4-19
0.3	35	439	90.6	9.4	2-10
0.075	31	470	97.0	3.0	0-8

AFTER EXTRACTION(Trail-2)

Weight of Sample : 485 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Specification Limits as per MORTH specification Table 500-7(grading -2)
26.5	0	0	0.0	100.0	100
19	38	38	7.8	92.2	90-100
13.2	151	189	39.0	61.0	56-88
4.75	191	380	78.4	21.6	16-36
2.36	28	408	84.1	15.9	4-19
0.3	37	445	91.8	8.2	2-10
0.075	30	475	97.9	2.1	0-8

* The results obtained are satisfactory as per standard requirements.

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TEST RESULTS OF BITUMEN BINDAR CONTENT AND GRADATION FOR BM (IS 2386:(Part 1) 1963 (RA2011)

Lab ID	:	CP-RW-2022-12-14-01 Date: 15-12-22
Project Name	:	Improvements and Restoration of Roads in Ward NO. 05 (Package 01) (Package Consists of 6 Works).
Agency	:	Sri.K.R Santhosh Kumar, No:4, Samrudhi, AVR Block 1st, A Main, Dhanalakshmi Layout, Virupakshapura, Bangalore-560097
Customer Reference	:	BBMP/EE/BTP/WO/48/2022-23
Date of Receipt	:	14-12-22
Type of Mix	:	BM (Bituminous Macadam)
Source of Sample	:	Sukruthi House #26
Date of test	:	14-12-22

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	W1	500	500
2	Weight of the sample After extraction	W2	484.5	484.5
3	Initial weight of Paper	W3	4	4
4	Final weight of Paper	W4	6	6
5	Increase in weight of Filter Paper	W5=W4-W3	2	2
6	Bitumen percentage	$\frac{W1-W2+W5}{W1} \times 100$	3.50	3.50
7	Average percentage	%	3.50	

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Lab ID : CP-RW-2022-12-14-01 Date: 15-12-22

AFTER EXTRACTION(Trail-1)

Weight of Sample : 484.5 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Specification Limits as per MORTH specification Table 500-7(grading -2)
26.5	0	0	0.0	100.0	100
19	35	35	7.2	92.8	90-100
13.2	146	181	37.4	62.6	56-88
4.75	185	366	75.5	24.5	16-36
2.36	32	398	82.1	17.9	4-19
0.3	41	439	90.6	9.4	2-10
0.075	28	467	96.4	3.6	0-8

AFTER EXTRACTION(Trail-2)

Weight of Sample : 484.5 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Specification Limits as per MORTH specification Table 500-7(grading -2)
26.5	0	0	0.0	100.0	100
19	33	33	6.8	93.2	90-100
13.2	151	184	38.0	62.0	56-88
4.75	190	374	77.2	22.8	16-36
2.36	32	406	83.8	16.2	4-19
0.3	34	440	90.8	9.2	2-10
0.075	35	475	98.0	2.0	0-8

* The results obtained are satisfactory as per standard requirements.

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TEST RESULTS OF BITUMEN BINDAR CONTENT AND GRADATION FOR BM (IS 2386:(Part 1) 1963 (RA2011)

Lab ID	:	CP-RW-2022-12-15-01 Date: 16-12-22
Project Name	:	Improvements and Restoration of Roads in Ward NO. 05 (Package 01) (Package Consists of 6 Works).
Agency	:	Sri.K.R Santhosh Kumar, No:4, Samrudhi, AVR Block 1st, A Main, Dhanalakshmi Layout, Virupakshapura, Bangalore-560097
Customer Reference	:	BBMP/EE/BTP/WO/48/2022-23
Date of Receipt	:	15-12-22
Type of Mix	:	BM (Bituminous Macadam)
Source of Sample	:	S.P Singh House Road
Date of test	:	15-12-22

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	W1	500	500
2	Weight of the sample After extraction	W2	484	485
3	Initial weight of Paper	W3	4	4
4	Final weight of Paper	W4	6	6
5	Increase in weight of Filter Paper	W5=W4-W3	2	2
6	Bitumen percentage	$\frac{W1-W2+W5}{W1} \times 100$	3.60	3.40
7	Average percentage	%	3.50	

ಸಹಾಯಕ ಅಭಿಯಂತರರು
ಬಿ.ಬಿ.ಎಂ.ಪಿ ಚ್ಯಾಟಿಕಾಯನಪುರ ಉಪ ವಿಭಾಗ

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಚ್ಯಾಟಿಕಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ, ಬೆಂಗಳೂರು-24

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Lab ID : CP-RW-2022-12-15-01 Date: 16-12-22

AFTER EXTRACTION(Trail-1)

Weight of Sample : 484 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Specification Limits as per MORTH specification Table 500-7(grading -2)
26.5	0	0	0.0	100.0	100
19	30	30	6.2	93.8	90-100
13.2	144	174	36.0	64.0	56-88
4.75	195	369	76.2	23.8	16-36
2.36	32	401	82.9	17.1	4-19
0.3	36	437	90.3	9.7	2-10
0.075	28	465	96.1	3.9	0-8

AFTER EXTRACTION(Trail-2)

Weight of Sample : 485 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Specification Limits as per MORTH specification Table 500-7(grading -2)
26.5	0	0	0.0	100.0	100
19	32	32	6.6	93.4	90-100
13.2	145	177	36.5	63.5	56-88
4.75	190	367	75.7	24.3	16-36
2.36	32	399	82.3	17.7	4-19
0.3	42	441	90.9	9.1	2-10
0.075	25	466	96.1	3.9	0-8

* The results obtained are satisfactory as per standard requirements.

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TEST RESULTS OF BITUMEN BINDAR CONTENT AND GRADATION FOR BM (IS 2386:(Part 1) 1963 (RA2011)

Lab ID	:	CP-RW-2022-12-15-01 Date: 16-12-22
Project Name	:	Improvements and Restoration of Roads in Ward NO. 05 (Package 01) (Package Consists of 6 Works).
Agency	:	Sri.K.R Santhosh Kumar, No:4, Samrudhi, AVR Block 1st, A Main, Dhanalakshmi Layout, Virupakshapura, Bangalore-560097
Customer Reference	:	BBMP/EE/BTP/WO/48/2022-23
Date of Receipt	:	15-12-22
Type of Mix	:	BM (Bituminous Macadam)
Source of Sample	:	Sri Ganga House
Date of test	:	15-12-22

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	W1	500	500
2	Weight of the sample After extraction	W2	484	484
3	Initial weight of Paper	W3	4	4
4	Final weight of Paper	W4	6	6
5	Increase in weight of Filter Paper	W5=W4-W3	2	2
6	Bitumen percentage	$\frac{W1-W2+W5}{W1}$ X 100	3.60	3.60
7	Average percentage	%	3.60	

ಸಹಾಯಕ ಆಧಿಯಂತರರು
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ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಧಿಯಂತರರ
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬೆಂಗಳೂರು-26

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Lab ID : CP-RW-2022-12-15-01 Date: 16-12-22

AFTER EXTRACTION(Trail-1)

Weight of Sample : 484 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Specification Limits as per MORTH specification Table 500-7(grading -2)
26.5	0	0	0.0	100.0	100
19	26	26	5.4	94.6	90-100
13.2	142	168	34.7	65.3	56-88
4.75	187	355	73.3	26.7	16-36
2.36	38	393	81.2	18.8	4-19
0.3	45	438	90.5	9.5	2-10
0.075	28	466	96.3	3.7	0-8

AFTER EXTRACTION(Trail-2)

Weight of Sample : 484 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Specification Limits as per MORTH specification Table 500-7(grading -2)
26.5	0	0	0.0	100.0	100
19	27	27	5.6	94.4	90-100
13.2	152	179	37.0	63.0	56-88
4.75	184	363	75.0	25.0	16-36
2.36	41	404	83.5	16.5	4-19
0.3	45	449	92.8	7.2	2-10
0.075	20	469	96.9	3.1	0-8

*The results obtained are satisfactory as per standard requirements.

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TEST RESULTS OF BITUMEN BINDAR CONTENT AND GRADATION FOR BM
(IS 2386:(Part 1) 1963 (RA2011)

Lab ID	:	CP-RW-2022-12-17-01	Date: 19-12-22
Project Name	:	Improvements and Restoration of Roads in Ward NO. 05 (Package 01) (Package Consists of 6 Works).	
Agency	:	Sri.K.R Santhosh Kumar, No:4, Samrudhi, AVR Block 1st, A Main, Dhanalakshmi Layout, Virupakshapura, Bangalore-560097	
Customer Reference	:	BBMP/EE/BTP/WO/48/2022-23	
Date of Receipt	:	17-12-22	
Type of Mix	:	BM (Bituminous Macadam)	
Source of Sample	:	Pyramid Apartment Road	
Date of test	:	17-12-22	

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	W1	500	500
2	Weight of the sample After extraction	W2	485	484.5
3	Initial weight of Paper	W3	4	4
4	Final weight of Paper	W4	6	6
5	Increase in weight of Filter Paper	W5=W4-W3	2	2
6	Bitumen percentage	$\frac{W1-W2+W5}{W1} \times 100$	3.40	3.50
7	Average percentage	%	3.45	

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Lab ID : CP-RW-2022-12-17-01

Date: 19-12-22

AFTER EXTRACTION(Trail-1)

Weight of Sample : 485 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Specification Limits as per MORTH specification Table 500-7(grading -2)
26.5	0	0	0.0	100.0	100
19	31	31	6.4	93.6	90-100
13.2	142	173	35.7	64.3	56-88
4.75	195	368	75.9	24.1	16-36
2.36	32	400	82.5	17.5	4-19
0.3	40	440	90.7	9.3	2-10
0.075	28	468	96.5	3.5	0-8

AFTER EXTRACTION(Trail-2)

Weight of Sample : 484.5 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Specification Limits as per MORTH specification Table 500-7(grading -2)
26.5	0	0	0.0	100.0	100
19	27	27	5.6	94.4	90-100
13.2	149	176	36.3	63.7	56-88
4.75	190	366	75.5	24.5	16-36
2.36	32	398	82.1	17.9	4-19
0.3	41	439	90.6	9.4	2-10
0.075	35	474	97.8	2.2	0-8

* The results obtained are satisfactory as per standard requirements.

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TEST RESULTS OF BITUMEN BINDAR CONTENT AND GRADATION FOR BM (IS 2386:(Part 1) 1963 (RA2011)

Lab ID : CP-RW-2022-12-17-01 Date: 19-12-22

Project Name : Improvements and Restoration of Roads in Ward NO. 05 (Package 01) (Package Consists of 6 Works).

Agency : Sri.K.R Santhosh Kumar, No:4, Samrudhi, AVR Block 1st, A Main, Dhanalakshmi Layout, Virupakshapura, Bangalore-560097

Customer Reference : BBMP/EE/BTP/WO/48/2022-23

Date of Receipt : 17-12-22

Type of Mix : BM (Bituminous Macadam)

Source of Sample : Green Garden Main Road

Date of test : 17-12-22

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	W1	500	500
2	Weight of the sample After extraction	W2	485	485
3	Initial weight of Paper	W3	4	4
4	Final weight of Paper	W4	6	6
5	Increase in weight of Filter Paper	W5=W4-W3	2	2
6	Bitumen percentage	$\frac{W1-W2+W5}{W1} \times 100$	3.40	3.40
7	Average percentage	%	3.40	

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Lab ID : CP-RW-2022-12-17-01

Date: 19-12-22

AFTER EXTRACTION(Trail-1)

Weight of Sample : 485 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Specification Limits as per MORTH specification Table 500-7(grading -2)
26.5	0	0	0.0	100.0	100
19	32	32	6.6	93.4	90-100
13.2	144	176	36.3	63.7	56-88
4.75	186	362	74.6	25.4	16-36
2.36	35	397	81.9	18.1	4-19
0.3	42	439	90.5	9.5	2-10
0.075	28	467	96.3	3.7	0-8

AFTER EXTRACTION(Trail-2)

Weight of Sample : 485 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Specification Limits as per MORTH specification Table 500-7(grading -2)
26.5	0	0	0.0	100.0	100
19	26	26	5.4	94.6	90-100
13.2	146	172	35.5	64.5	56-88
4.75	185	357	73.6	26.4	16-36
2.36	38	395	81.4	18.6	4-19
0.3	43	438	90.3	9.7	2-10
0.075	32	470	96.9	3.1	0-8

*The results obtained are satisfactory as per standard requirements.

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TEST RESULTS OF BITUMEN BINDAR CONTENT AND GRADATION FOR BM (IS 2386:(Part 1) 1963 (RA2011)

Lab ID : CP-RW-2022-12-25-01 Date: 27-12-22

Project Name : Improvements and Restoration of Roads in Ward NO. 05 (Package 01) (Package Consists of 6 Works).

Agency : Sri.K.R Santhosh Kumar, No:4, Samrudhi, AVR Block 1st, A Main, Dhanalakshmi Layout, Virupakshapura, Bangalore-560097

Customer Reference : BBMP/EE/BTP/WO/48/2022-23

Date of Receipt : 25-12-22

Type of Mix : BM (Bituminous Macadam)

Source of Sample : Green Garden

Date of test : 26-12-22

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	W1	500	500
2	Weight of the sample After extraction	W2	484	484.5
3	Initial weight of Paper	W3	4	4
4	Final weight of Paper	W4	6	6
5	Increase in weight of Filter Paper	W5=W4-W3	2	2
6	Bitumen percentage	$\frac{W1-W2+W5}{W1} \times 100$	3.60	3.50
7	Average percentage	%	3.55	

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ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
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Lab ID : CP-RW-2022-12-25-01 Date: 27-12-22

AFTER EXTRACTION(Trail-1)

Weight of Sample : 484 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Specification Limits as per MORTH specification Table 500-7(grading -2)
26.5	0	0	0.0	100.0	100
19	33	33	6.8	93.2	90-100
13.2	145	178	36.8	63.2	56-88
4.75	185	363	75.0	25.0	16-36
2.36	35	398	82.2	17.8	4-19
0.3	42	440	90.9	9.1	2-10
0.075	28	468	96.7	3.3	0-8

AFTER EXTRACTION(Trail-2)

Weight of Sample : 484.5 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Specification Limits as per MORTH specification Table 500-7(grading -2)
26.5	0	0	0.0	100.0	100
19	0	0	0.0	100.0	90-100
13.2	141	141	29.1	70.9	56-88
4.75	185	326	67.3	32.7	16-36
2.36	68	394	81.3	18.7	4-19
0.3	69	463	95.6	4.4	2-10
0.075	12	475	98.0	2.0	0-8

*The results obtained are satisfactory as per standard requirements.

ಸಹಾಯಕ ಅಭಿಯಂತರರು
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TEST RESULTS OF GRADATION FOR BC
IS 2386 (Part 1) 1963 (RA 2007)

Lab ID : CP-RW-2022-12-10-01 Date: 12-12-22

Project Name : Improvements and Restoration of Roads in Ward NO. 05 (Package 01) (Package Consists of 6 Works).

Agency : Sri.K.R Santhosh Kumar, No:4, Samrudhi, AVR Block 1st, A Main, Dhanalakshmi Layout, Virupakshapura, Bangalore-560097

Customer Reference : BBMP/EE/BTP/WO/48/2022-23

Date of Receipt : 10-12-22

Type of Mix : BC-Plant (Bituminous Concrete)

Date of test : 10-12-22

Oven Dry Weight : 5000 Grams

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-17(grading-2)
19	0	0	0.0	100.0	100
13.2	85	85	1.7	98.3	90-100
9.5	698	783	15.7	84.3	70-88
4.75	895	1678	33.6	66.4	53-71
2.36	587	2265	45.3	54.7	42-58
1.18	492	2757	55.1	44.9	34-48
0.6	503	3260	65.2	34.8	26-38
0.3	528	3788	75.8	24.2	18-28
0.15	458	4246	84.9	15.1	12-20
0.075	350	4596	91.9	8.1	4-10
PAN	404	5000	100	0.0	0

*The results obtained are satisfactory as per standard requirements.

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TEST REPORT OF AGGEGRATE STRIPPING VALUE OF ROAD AGGRGATE (IS:6241)

Lab ID	:	CP-RW-2022-12-10-01
Project Name	:	Improvements and Restoration of Roads in Ward NO. 05 (Package 01) (Package Consists of 6 Works). **Date: 13-12-22**
Agency	:	Sri.K.R Santhosh Kumar, No:4, Samrudhi, AVR Block 1st, A Main, Dhanalakshmi Layout, Virupakshapura, Bangalore-560097
Customer Reference	:	BBMP/EE/BTP/WO/48/2022-23
Date of Receipt	:	10-12-22
Type of Mix	:	BC(Bitumenous Concrete)
Date of test	:	10-12-22

Type of Binder	:	60/70
% of Binder Used	:	5.4%
Weight of Aggregate	:	200.0 gm
Weight of Binder	:	10.8 gm
Temperature of water bath	:	40°C

No of test	Retained Stripping Percentage	Stripping Percentage	Average Retained Stripping Percentage	Secified limits as per MORTH specification table 500-8
1	98.6	1.4	98.3	Minimum Retained Coating 95%
2	98.0	2.0		
3	98.2	1.8		

* The results obtained are satisfactory as per standard requirements.

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PHYSICAL REQUIREMENTS FOR COARSE AGGREGATE FOR BITUMINOUS CONCRETE

Lab ID : CP-RW-2022-12-10-01

Project Name : Improvements and Restoration of Roads in Ward NO. 05 (Package 01) (Package Consists of 6 Works). **Date: 13-12-22**

Agency : Sri.K.R Santhosh Kumar, No:4, Samrudhi, AVR Block 1st, A Main, Dhanalakshmi Layout, Virupakshapura, Bangalore-560097

Customer Reference : BBMP/EE/BTP/WO/48/2022-23

Date of Receipt : 10-12-22

Type of Mix : BC (Bituminous Concrete)

Date of test : 10-12-22

Table 500-16 : Physical Requirements fo Coarse Aggregate for Bituminous Concrete

Property	Test	Result	Specification	Method of Test
Partical Shape	Flakiness Index	12.5	Combined Flakiness & Elongation Index for BC is Maximum 35%	IS:2386 Part I
	Elongation Index	11.9		
Strength	Aggregate Impact Value	22.3	Maximum 24%	IS:2386 Part IV
Specific gravity	Specific gravity	2.7	Maximum 2.7	IS:2386 Part III
Water Absorption	Water Absorption	0.23	Maximum 2%	IS:2386 Part III

*The results obtained are satisfactory as per standard requirements.

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TESTS RESULTS ON STABILITY OF MIX

Lab ID : CP-RW-2022-12-10-01 Date: 13-12-22

Project Name : Improvements and Restoration of Roads in Ward NO. 05 (Package 01) (Package Consists of 6 Works).

Agency : Sri.K.R Santhosh Kumar, No:4, Samrudhi, AVR Block 1st, A Main, Dhanalakshmi Layout, Virupakshapura, Bangalore-560097

Customer Reference : BBMP/EE/BTP/WO/48/2022-23

Date of Receipt : 10-12-22

Type of Mix : BC (Bituminous Concrete)

Date of test : 10-12-22

The results of the tests conducted on the Bituminous Concrete mix sample are as follow

Sl.No	Particulars of observations	TEST 1	TEST 2	Secified limits as per MORTH specification table 500-11
1	Marshal Stability at 60°C, KN	11.13	11.13	10KN(min)
2	Marshal flow at 60°C, mm	3.52	3.51	2-4
3	Percent air Voids	4.82	4.83	3-5
4	Percent Voids in mineral Aggregate(VMA %)	14.28	14.26	13-15
5	Percent Voids filled with Bitumen(VFB %)	71.87	71.63	65-75
6	Density, g/cc	2.25	2.26	–

* The results obtained are satisfactory as per standard requirements.

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TEST RESULTS OF BITUMEN BINDAR CONTENT AND GRADATION FOR BC
IS 2386 (Part 1) 1963 (RA 2011)

Lab ID : CP-RW-2022-12-25-01

Date: 27-12-22

Project Name : Improvements and Restoration of Roads in Ward NO. 05 (Package 01) (Package Consists of 6 Works).

Agency : Sri.K.R Santhosh Kumar, No:4, Samrudhi, AVR Block 1st, A Main, Dhanalakshmi Layout, Virupakshapura, Bangalore-560097

Customer Reference : BBMP/EE/BTP/WO/48/2022-23

Date of Receipt : 25-12-22

Type of Mix : BC (Bituminous Concrete)

Source of Sample : Green Garden Main Road

Date of test : 26-12-22

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	W1	500	500
2	Weight of the sample After extraction	W2	475	475
3	Initial weight of Paper	W3	4	4
4	Final weight of Paper	W4	6	6
5	Increase in weight of Filter Paper	W5=W4-W3	2	2
6	Bitumen percentage	$\frac{W1-W2+W5}{W1} \times 100$	5.40	5.40
7	Average percentage	%	5.4	

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Lab ID : CP-RW-2022-12-25-01 Date: 27-12-22

AFTER EXTRACTION - Trail-1

Total Weight of the Sample(gm) : 475

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	4	4	0.8	99.2	90-100
9.5	62	66	13.9	86.1	70-88
4.75	112	178	37.5	62.5	53-71
2.36	88	266	56.0	44.0	42-58
1.18	29	295	62.1	37.9	34-48
0.6	11	306	64.4	35.6	26-38
0.3	46	352	74.1	25.9	18-28
0.15	45	397	83.6	16.4	12-20
0.075	55	452	95.2	4.8	4-10

AFTER EXTRACTION - Trail-2

Total Weight of the Sample(gm) : 475

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	4	4	0.8	99.2	90-100
9.5	62	66	13.9	86.1	70-88
4.75	112	178	37.5	62.5	53-71
2.36	88	266	56.0	44.0	42-58
1.18	29	295	62.1	37.9	34-48
0.6	11	306	64.4	35.6	26-38
0.3	46	352	74.1	25.9	18-28
0.15	45	397	83.6	16.4	12-20
0.075	55	452	95.2	4.8	4-10

* The results obtained are satisfactory as per standard requirements.

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TEST RESULTS OF BITUMEN BINDAR CONTENT AND GRADATION FOR BM (IS 2386:(Part 1) 1963 (RA2011)

Lab ID	:	CP-RW-2022-12-25-01
Project Name	:	Improvements and Restoration of Roads in Ward NO. 05 (Package 01) (Package Consists of 6 Works).
Agency	:	Sri.K.R Santhosh Kumar, No:4, Samrudhi, AVR Block 1st, A Main, Dhanalakshmi Layout, Virupakshapura, Bangalore-560097
Customer Reference	:	BBMP/EE/BTP/WO/48/2022-23
Date of Receipt	:	25-12-22
Type of Mix	:	BM (Bituminous Macadam)
Source of Sample	:	Amulya Bar Road
Date of test	:	26-12-22

Date: 27-12-22

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	W1	500	500
2	Weight of the sample After extraction	W2	484.5	484.5
3	Initial weight of Paper	W3	4	4
4	Final weight of Paper	W4	6	6
5	Increase in weight of Filter Paper	W5=W4-W3	2	2
6	Bitumen percentage	$\frac{W1-W2+W5}{W1} \times 100$	3.50	3.50
7	Average percentage	%	3.50	

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Lab ID : CP-RW-2022-12-25-01 Date: 27-12-22

AFTER EXTRACTION(Trail-1)

Weight of Sample : 484.5 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Specification Limits as per MORTH specification Table 500-7(grading -2)
26.5	0	0	0.0	100.0	100
19	12	12	2.5	97.5	90-100
13.2	141	153	31.6	68.4	56-88
4.75	183	336	69.3	30.7	16-36
2.36	62	398	82.1	17.9	4-19
0.3	42	440	90.8	9.2	2-10
0.075	28	468	96.6	3.4	0-8

AFTER EXTRACTION(Trail-2)

Weight of Sample : 484.5 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Specification Limits as per MORTH specification Table 500-7(grading -2)
26.5	0	0	0.0	100.0	100
19	15	15	3.1	96.9	90-100
13.2	143	158	32.6	67.4	56-88
4.75	187	345	71.2	28.8	16-36
2.36	70	415	85.7	14.3	4-19
0.3	50	465	96.0	4.0	2-10
0.075	12	477	98.5	1.5	0-8

* The results obtained are satisfactory as per standard requirements.

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TEST RESULTS OF BITUMEN BINDAR CONTENT AND GRADATION FOR BC
IS 2386 (Part 1) 1963 (RA 2011)

Lab ID : CP-RW-2022-12-25-01

Date: 27-12-22

Project Name : Improvements and Restoration of Roads in Ward NO. 05 (Package 01) (Package Consists of 6 Works).

Agency : Sri.K.R Santhosh Kumar, No:4, Samrudhi, AVR Block 1st, A Main, Dhanalakshmi Layout, Virupakshapura, Bangalore-560097

Customer Reference : BBMP/EE/BTP/WO/48/2022-23

Date of Receipt : 25-12-22

Type of Mix : BC (Bituminous Concrete)

Source of Sample : Koustaba House #33

Date of test : 26-12-22

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	W1	500	500
2	Weight of the sample After extraction	W2	474.5	474.5
3	Initial weight of Paper	W3	4	4
4	Final weight of Paper	W4	6	6
5	Increase in weight of Filter Paper	W5=W4-W3	2	2
6	Bitumen percentage	$\frac{W1-W2+W5}{W1} \times 100$	5.50	5.50
7	Average percentage	%	5.5	

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Lab ID : CP-RW-2022-12-25-01 Date: 27-12-22

AFTER EXTRACTION - Trail-1

Total Weight of the Sample(gm) : 474.5

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	6	6	1.3	98.7	90-100
9.5	52	58	12.2	87.8	70-88
4.75	155	213	44.9	55.1	53-71
2.36	46	259	54.6	45.4	42-58
1.18	39	298	62.8	37.2	34-48
0.6	15	313	66.0	34.0	26-38
0.3	46	359	75.7	24.3	18-28
0.15	45	404	85.1	14.9	12-20
0.075	39	443	93.4	6.6	4-10

AFTER EXTRACTION - Trail-2

Total Weight of the Sample(gm) : 474.5

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	6	6	1.3	98.7	90-100
9.5	75	81	17.1	82.9	70-88
4.75	120	201	42.4	57.6	53-71
2.36	67	268	56.5	43.5	42-58
1.18	32	300	63.2	36.8	34-48
0.6	15	315	66.4	33.6	26-38
0.3	38	353	74.4	25.6	18-28
0.15	29	382	80.5	19.5	12-20
0.075	63	445	93.8	6.2	4-10

* The results obtained are satisfactory as per standard requirements.

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TEST RESULTS OF BITUMEN BINDAR CONTENT AND GRADATION FOR BC
IS 2386 (Part 1) 1963 (RA 2011)

Lab ID : CP-RW-2022-12-25-01

Project Name : Improvements and Restoration of Roads in Ward NO. 05 (Package 01) (Package Consists of 6 Works). Date: 27-12-22

Agency : Sri.K.R Santhosh Kumar, No:4, Samrudhi, AVR Block 1st, A Main, Dhanalakshmi Layout, Virupakshapura, Bangalore-560097

Customer Reference : BBMP/EE/BTP/WO/48/2022-23

Date of Receipt : 25-12-22

Type of Mix : BC (Bituminous Concrete)

Source of Sample : Sukruthi House #26

Date of test : 26-12-22

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	W1	500	500
2	Weight of the sample After extraction	W2	474.5	474.5
3	Initial weight of Paper	W3	4	4
4	Final weight of Paper	W4	6	6
5	Increase in weight of Filter Paper	W5=W4-W3	2	2
6	Bitumen percentage	$\frac{W1-W2+W5}{W1}$ X 100	5.50	5.50
7	Average percentage	%	5.50	

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Lab ID : CP-RW-2022-12-25-01 Date: 27-12-22

AFTER EXTRACTION - Trail-1

Total Weight of the Sample(gm) : 474.5

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	22	22	4.6	95.4	90-100
9.5	56	78	16.4	83.6	70-88
4.75	112	190	40.0	60.0	53-71
2.36	78	268	56.5	43.5	42-58
1.18	32	300	63.2	36.8	34-48
0.6	26	326	68.7	31.3	26-38
0.3	53	379	79.9	20.1	18-28
0.15	30	409	86.2	13.8	12-20
0.075	32	441	92.9	7.1	4-10

AFTER EXTRACTION - Trail-2

Total Weight of the Sample(gm) : 474.5

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	8	8	1.7	98.3	90-100
9.5	75	83	17.5	82.5	70-88
4.75	119	202	42.6	57.4	53-71
2.36	59	261	55.0	45.0	42-58
1.18	32	293	61.7	38.3	34-48
0.6	26	319	67.2	32.8	26-38
0.3	63	382	80.5	19.5	18-28
0.15	22	404	85.1	14.9	12-20
0.075	45	449	94.6	5.4	4-10

* The results obtained are satisfactory as per standard requirements.

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TEST RESULTS OF BITUMEN BINDAR CONTENT AND GRADATION FOR BC
IS 2386 (Part 1) 1963 (RA 2011)

Lab ID	:	**CP-RW-2022-12-26-01**	**Date: 27-12-22**
Project Name	:	Improvements and Restoration of Roads in Ward NO. 05 (Package 01) (Package Consists of 6 Works).	
Agency	:	Sri.K.R Santhosh Kumar, No:4, Samrudhi, AVR Block 1st, A Main, Dhanalakshmi Layout, Virupakshapura, Bangalore-560097	
Customer Reference	:	BBMP/EE/BTP/WO/48/2022-23	
Date of Receipt	:	26-12-22	
Type of Mix	:	BC (Bituminous Concrete)	
Source of Sample	:	S.P Singh House	
Date of test	:	26-12-22	

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	W1	500	500
2	Weight of the sample After extraction	W2	475	475
3	Initial weight of Paper	W3	4	4
4	Final weight of Paper	W4	6	6
5	Increase in weight of Filter Paper	W5=W4-W3	2	2
6	Bitumen percentage	$\frac{W1-W2+W5}{W1}$ X 100	5.40	5.40
7	Average percentage	%	5.40	

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ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
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ಬಿಬಿಎಂಪಿ, ಬೆಂಗಳೂರು-26

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Lab ID : CP-RW-2022-12-26-01 Date: 27-12-22

AFTER EXTRACTION - Trail-1

Total Weight of the Sample(gm) : 475

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	23	23	4.8	95.2	90-100
9.5	58	81	17.1	82.9	70-88
4.75	116	197	41.5	58.5	53-71
2.36	74	271	57.1	42.9	42-58
1.18	34	305	64.2	35.8	34-48
0.6	28	333	70.1	29.9	26-38
0.3	51	384	80.8	19.2	18-28
0.15	21	405	85.3	14.7	12-20
0.075	32	437	92.0	8.0	4-10

AFTER EXTRACTION - Trail-2

Total Weight of the Sample(gm) : 475

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	36	36	7.6	92.4	90-100
9.5	86	122	25.7	74.3	70-88
4.75	85	207	43.6	56.4	53-71
2.36	41	248	52.2	47.8	42-58
1.18	22	270	56.8	43.2	34-48
0.6	30	300	63.2	36.8	26-38
0.3	75	375	78.9	21.1	18-28
0.15	16	391	82.3	17.7	12-20
0.075	49	440	92.6	7.4	4-10

* The results obtained are satisfactory as per standard requirements.

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ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
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TEST RESULTS OF BITUMEN BINDAR CONTENT AND GRADATION FOR BC
IS 2386 (Part 1) 1963 (RA 2011)

Date: 27-12-22

Lab ID	:	CP-RW-2022-12-26-01
Project Name	:	Improvements and Restoration of Roads in Ward NO. 05 (Package 01) (Package Consists of 6 Works).
Agency	:	Sri.K.R Santhosh Kumar, No:4, Samrudhi, AVR Block 1st, A Main, Dhanalakshmi Layout, Virupakshapura, Bangalore-560097
Customer Reference	:	BBMP/EE/BTP/WO/48/2022-23
Date of Receipt	:	26-12-22
Type of Mix	:	BC (Bituminous Concrete)
Source of Sample	:	Amulya Bar Road
Date of test	:	26-12-22

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	W1	500	500
2	Weight of the sample After extraction	W2	474.5	475
3	Initial weight of Paper	W3	4	4
4	Final weight of Paper	W4	6	6
5	Increase in weight of Filter Paper	W5=W4-W3	2	2
6	Bitumen percentage	$\frac{W1-W2+W5}{W1} \times 100$	5.50	5.40
7	Average percentage	%	5.45	

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ಸಹಾಯಕ ಕಾರ್ಯನಿರ್ವಾಹಕ ಅಭಿಯಂತರರ
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ಬಿಬಿಎಂಪಿ, ಬೆಂಗಳೂರು-26

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Quality Manager

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Lab ID : CP-RW-2022-12-26-01

Date: 27-12-22

AFTER EXTRACTION - Trail-1

Total Weight of the Sample(gm) : 474.5

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	25	25	5.3	94.7	90-100
9.5	58	83	17.5	82.5	70-88
4.75	116	199	41.9	58.1	53-71
2.36	71	270	56.9	43.1	42-58
1.18	34	304	64.1	35.9	34-48
0.6	28	332	70.0	30.0	26-38
0.3	51	383	80.7	19.3	18-28
0.15	21	404	85.1	14.9	12-20
0.075	32	436	91.9	8.1	4-10

AFTER EXTRACTION - Trail-2

Total Weight of the Sample(gm) : 475

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	32	32	6.7	93.3	90-100
9.5	45	77	16.2	83.8	70-88
4.75	123	200	42.1	57.9	53-71
2.36	62	262	55.2	44.8	42-58
1.18	38	300	63.2	36.8	34-48
0.6	22	322	67.8	32.2	26-38
0.3	48	370	77.9	22.1	18-28
0.15	38	408	85.9	14.1	12-20
0.075	28	436	91.8	8.2	4-10

* The results obtained are satisfactory as per standard requirements.

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TEST RESULTS OF BITUMEN BINDAR CONTENT AND GRADATION FOR BC
IS 2386 (Part 1) 1963 (RA 2011)

Lab ID : CP-RW-2022-12-27-01

Project Name : Improvements and Restoration of Roads in Ward NO. 05 (Package 01) (Package Consists of 6 Works). **Date: 28-12-22**

Agency : Sri.K.R Santhosh Kumar, No:4, Samrudhi, AVR Block 1st, A Main, Dhanalakshmi Layout, Virupakshapura, Bangalore-560097

Customer Reference : BBMP/EE/BTP/WO/48/2022-23

Date of Receipt : 27-12-22

Type of Mix : BC (Bituminous Concrete)

Source of Sample : Pyramid Apartment Green garden

Date of test : 27-12-22

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	W1	500	500
2	Weight of the sample After extraction	W2	475	474
3	Initial weight of Paper	W3	4	4
4	Final weight of Paper	W4	6	6
5	Increase in weight of Filter Paper	W5=W4-W3	2	2
6	Bitumen percentage	$\frac{W1-W2+W5}{W1} \times 100$	5.40	5.60
7	Average percentage	%	5.50	

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ಬಿ.ಬಿ.ಬಿ.ಎ., ಬೆಂಗಳೂರು-26.

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Lab ID : CP-RW-2022-12-27-01

Date: 28-12-22

AFTER EXTRACTION - Trail-1

Total Weight of the Sample(gm) : 475

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	0	0	0.0	100.0	90-100
9.5	78.0	78	16.4	83.6	70-88
4.75	110.5	188.5	39.7	60.3	53-71
2.36	85.5	274	57.7	42.3	42-58
1.18	36.0	310	65.3	34.7	34-48
0.6	35.5	345.5	72.7	27.3	26-38
0.3	38.5	384	80.8	19.2	18-28
0.15	29.0	413	86.9	13.1	12-20
0.075	36.5	449.5	94.6	5.4	4-10

AFTER EXTRACTION - Trail-2

Total Weight of the Sample(gm) : 474

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	4	4	0.8	99.2	90-100
9.5	62	66	13.9	86.1	70-88
4.75	112	178	37.6	62.4	53-71
2.36	88	266	56.1	43.9	42-58
1.18	29	295	62.2	37.8	34-48
0.6	11	306	64.6	35.4	26-38
0.3	46	352	74.3	25.7	18-28
0.15	45	397	83.8	16.2	12-20
0.075	48	445	93.9	6.1	4-10

* The results obtained are satisfactory as per standard requirements.

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ಬಿ.ಬಿ.ಎಂ.ಪಿ, ಬೆಂಗಳೂರು-26

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TEST RESULTS OF BITUMEN BINDAR CONTENT AND GRADATION FOR BC
IS 2386 (Part 1) 1963 (RA 2011)

Lab ID	:	**CP-RW-2022-12-27-01**
Project Name	:	Improvements and Restoration of Roads in Ward NO. 05 (Package 01) (Package Consists of 6 Works). **Date: 28-12-22**
Agency	:	Sri.K.R Santhosh Kumar, No:4, Samrudhi, AVR Block 1st, A Main, Dhanalakshmi Layout, Virupakshapura, Bangalore-560097
Customer Reference	:	BBMP/EE/BTP/WO/48/2022-23
Date of Receipt	:	27-12-22
Type of Mix	:	BC (Bituminous Concrete)
Source of Sample	:	Cross Road Green Garden
Date of test	:	27-12-22

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	W1	500	500
2	Weight of the sample After extraction	W2	474	474
3	Initial weight of Paper	W3	4	4
4	Final weight of Paper	W4	6	6
5	Increase in weight of Filter Paper	W5=W4-W3	2	2
6	Bitumen percentage	$\frac{W1-W2+W5}{W1}$ X 100	5.60	5.60
7	Average percentage	%	5.6	

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ವ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ, ಬೆಂಗಳೂರು-26

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Lab ID : CP-RW-2022-12-27-01 Date: 28-12-22

AFTER EXTRACTION - Trail-1

Total Weight of the Sample(gm) : 474

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	5	5	1.1	98.9	90-100
9.5	62	67	14.1	85.9	70-88
4.75	110	177	37.3	62.7	53-71
2.36	86	263	55.5	44.5	42-58
1.18	29	292	61.6	38.4	34-48
0.6	13	305	64.3	35.7	26-38
0.3	46	351	74.1	25.9	18-28
0.15	45	396	83.5	16.5	12-20
0.075	35	431	90.9	9.1	4-10

AFTER EXTRACTION - Trail-2

Total Weight of the Sample(gm) : 474

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	6	6	1.3	98.7	90-100
9.5	67	73	15.4	84.6	70-88
4.75	125	198	41.8	58.2	53-71
2.36	87	285	60.1	39.9	42-58
1.18	32	317	66.9	33.1	34-48
0.6	14	331	69.8	30.2	26-38
0.3	50	381	80.4	19.6	18-28
0.15	30	411	86.7	13.3	12-20
0.075	21	432	91.1	8.9	4-10

* The results obtained are satisfactory as per standard requirements.

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TEST RESULTS OF GRADATION FOR GSB
(IS 2386:(Part 1) 1963 (RA2011)

Lab ID	:	CP-RW-2023-03-01-01 Date: 03-03-23
Project Name	:	Improvements and Restoration of Roads in Ward NO. 05 (Package 01) (Package Consists of 6 Works).
Agency	:	Sri.K.R Santhosh Kumar, No:4, Samrudhi, AVR Block 1st, A Main, Dhanalakshmi Layout, Virupakshapura, Bangalore-560097
Customer Reference	:	BBMP/EE/BTP/WO/48/2022-23
Date of Receipt	:	01-03-23
Type of Mix	:	GSB (Granular Sub Base)
Source of Sample	:	Cars 24 Road
Date of test	:	01-03-23
Oven Dry Weight	:	10000 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	% Cumulative Weight Retained	% Passing	Spec. Limit Vide Table 400.1 MORTH Specification
75	0	0	0	100	100
53	997	997	9.97	90.03	80-100
26.5	1685	2682	26.82	73.18	55-90
9.5	1492	4174	41.74	58.26	35-65
4.75	1190	5364	53.64	46.36	25-55
2.36	1664	7028	70.28	29.72	20-40
0.425	1766	8794	87.94	12.06	10-25
0.075	1206	10000	100.00	0.00	0-5

TESTS ON FILLER SCREEN MATERIALS

Sl no	Particulars	Test results	Spec.Limit Vide Table
1	Liquid Limit, %	21.25%	Maximum 25
2	Plasticity index, %	Non plastic	Maximum 6

* The results obtained are satisfactory as per standard requirements.

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ಬಿ.ಬಿ.ಎಂ.ಪಿ, ಬೆಂಗಳೂರು-26

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TEST RESULTS OF GRADATION FOR WMM

Lab ID	:	CP-RW-2023-03-03-01 Date: 06-03-23
Project Name	:	Improvements and Restoration of Roads in Ward NO. 05 (Package 01) (Package Consists of 6 Works).
Agency	:	Sri.K.R Santhosh Kumar, No:4, Samrudhi, AVR Block 1st, A Main, Dhanalakshmi Layout, Virupakshapura, Bangalore-560097
Customer Reference	:	BBMP/EE/BTP/WO/48/2022-23
Date of Receipt	:	03-03-23
Type of Mix	:	WMM (Wet Mix Macadam)
Source of Sample	:	Cars 24 Road
Date of test	:	03-03-23
Oven Dry Weight	:	11000 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	% Cumulative Weight Retained	% Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0.0	100.0	100
45	318	318	2.9	97.1	95-100
22.4	3745	4063	36.9	63.1	60-80
11.2	2152	6215	56.5	43.5	40-60
4.75	1865	8080	73.5	26.5	25-40
2.36	1145	9225	83.9	16.1	15-30
0.6	788	10013	91.0	9.0	8-22
0.075	758	10771	97.9	2.1	0-5

*The results obtained are satisfactory as per standard requirements.

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TEST REPORT OF AGGEGRATE IMPACT VALUE
IS: 2386 Part IV

Lab ID	:	CP-RW-2023-03-03-01
Project Name	:	Improvements and Restoration of Roads in Ward NO. 05 (Package 01) (Package Consists of 6 Works). **Date: 06-03-23**
Agency	:	Sri.K.R Santhosh Kumar, No:4, Samrudhi, AVR Block 1st, A Main, Dhanalakshmi Layout, Virupakshapura, Bangalore-560097
Customer Reference	:	BBMP/EE/BTP/WO/48/2022-23
Date of Receipt	:	03-03-23
Type of Mix	:	Coarse Aggregate for WMM (Wet Mix Macadam)
Source of Sample	:	Cars 24 Road
Date of test	:	03-03-23

Sl.No	Particulars of observations	Index	TEST 1	TEST 2
1	Total weight of the surface dry sample sample (passing 12.5 mm and retained on 10mm sieve)	A	301.7	301.7
2	Weight of fraction passing 2.36mm sieve After giving 15 blows	B	72.5	73.8
3	weight of fraction retained 2.36mm sieve After giving 15 blows	C	228.6	227.3
4	Total weight of (B+C) is less than the initial weight (Weight A) by more than one gram the result shall be discarded and a fresh test made.	A-(B+C)	0.6	0.6
5	Aggregate impact value	(B/A)*100	24.0	24.5
6	Aggregate impact value (Mean of two tests)	Pecentage	24.2	

*The results obtained are satisfactory as per standard requirements.

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DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE(IS 2386 (Part 1) 1963 (RA 2007)

Lab ID	:	**CP-RW-2023-03-03-01** **Date: 06-03-23**
Project Name	:	Improvements and Restoration of Roads in Ward NO. 05 (Package 01) (Package Consists of 6 Works).
Agency	:	Sri.K.R Santhosh Kumar, No:4, Samrudhi, AVR Block 1st, A Main, Dhanalakshmi Layout, Virupakshapura, Bangalore-560097
Customer Reference	:	BBMP/EE/BTP/WO/48/2022-23
Date of Receipt	:	03-03-23
Type of Mix	:	Coarse Aggregate for WMM (Wet Mix Macadam)
Source of Sample	:	Cars 24 Road
Date of test	:	03-03-23

Result:

Index	Percentage of Flakiness and Elongation Index	Specified limits as per MORTH specification table 400-12
Flakiness Index	13.8%	Combined Flakiness & Elongation Index for WMM is Maximum 35%
Elongation Index	11.9%	
Combined Flakiness and Elongation Index for WMM	25.7%	

* The results obtained are satisfactory as per standard requirements.

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬೆಂಗಳೂರು-26

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TEST RESULTS OF BITUMEN BINDAR CONTENT AND GRADATION FOR BM (IS 2386:(Part 1) 1963 (RA2011)

Lab ID	:	CP-RW-2023-03-14-01
Project Name	:	Improvements and Restoration of Roads in Ward NO. 05 (Package 01) (Package Consists of 6 Works). **Date: 15-03-23**
Agency	:	Sri.K.R Santhosh Kumar, No:4, Samrudhi, AVR Block 1st, A Main, Dhanalakshmi Layout, Virupakshapura, Bangalore-560097
Customer Reference	:	BBMP/EE/BTP/WO/48/2022-23
Date of Receipt	:	14-03-23
Type of Mix	:	BM (Bituminous Macadam)
Source of Sample	:	Cars 24 Road
Date of test	:	14-03-23

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	W1	500	500
2	Weight of the sample After extraction	W2	484	484.5
3	Initial weight of Paper	W3	4	4
4	Final weight of Paper	W4	6	6
5	Increase in weight of Filter Paper	W5=W4-W3	2	2
6	Bitumen percentage	$\frac{W1-W2+W5}{W1}$ X 100	3.60	3.50
7	Average percentage	%	3.55	

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ಚಾಮರಾಜಪೇಟೆ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ, ಬೆಂಗಳೂರು-೨೬

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Lab ID : CP-RW-2023-03-14-01

Date: 15-03-23

AFTER EXTRACTION(Trail-1)

Weight of Sample : 484 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Specification Limits as per MORTH specification Table 500-7(grading -2)
26.5	0	0	0.0	100.0	100
19	14	14	2.9	97.1	90-100
13.2	145	159	32.9	67.1	56-88
4.75	181	340	70.2	29.8	16-36
2.36	60	400	82.6	17.4	4-19
0.3	42	442	91.3	8.7	2-10
0.075	28	470	97.1	2.9	0-8

AFTER EXTRACTION(Trail-2)

Weight of Sample : 484.5 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Specification Limits as per MORTH specification Table 500-7(grading -2)
26.5	0	0	0.0	100.0	100
19	16	16	3.3	96.7	90-100
13.2	146	162	33.4	66.6	56-88
4.75	187	349	72.0	28.0	16-36
2.36	70	419	86.5	13.5	4-19
0.3	45	464	95.8	4.2	2-10
0.075	10	474	97.8	2.2	0-8

* The results obtained are satisfactory as per standard requirements.

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ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
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TEST RESULTS OF BITUMEN BINDAR CONTENT AND GRADATION FOR BM (IS 2386:(Part 1) 1963 (RA2011)

Lab ID : CP-RW-2023-03-15-01

Project Name : Improvements and Restoration of Roads in Ward NO. 05 (Package 01) (Package Consists of 6 Works). Date: 16-03-23

Agency : Sri.K.R Santhosh Kumar, No:4, Samrudhi, AVR Block 1st, A Main, Dhanalakshmi Layout, Virupakshapura, Bangalore-560097

Customer Reference : BBMP/EE/BTP/WO/48/2022-23

Date of Receipt : 15-03-23

Type of Mix : BM (Bituminous Macadam)

Source of Sample : Cars 24 Road

Date of test : 15-03-23

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	W1	500	500
2	Weight of the sample After extraction	W2	484	485
3	Initial weight of Paper	W3	4	4
4	Final weight of Paper	W4	6	6
5	Increase in weight of Filter Paper	W5=W4-W3	2	2
6	Bitumen percentage	$\frac{W1-W2+W5}{W1}$ X 100	3.60	3.40
7	Average percentage	%	3.50	

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ಬಿ.ಬಿ.ಎಂ.ಪಿ, ಬೆಂಗಳೂರು-26

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಬಿ.ಬಿ.ಎಂ.ಪಿ ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

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Lab ID : CP-RW-2023-03-15-01

Date: 16-03-23

AFTER EXTRACTION(Trail-1)

Weight of Sample : 484 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Specification Limits as per MORTH specification Table 500-7(grading -2)
26.5	0	0	0.0	100.0	100
19	0	0	0.0	100.0	90-100
13.2	145	145	30.0	70.0	56-88
4.75	181	326	67.4	32.6	16-36
2.36	52	378	78.1	21.9	4-19
0.3	60	438	90.5	9.5	2-10
0.075	28	466	96.3	3.7	0-8

AFTER EXTRACTION(Trail-2)

Weight of Sample : 485 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Specification Limits as per MORTH specification Table 500-7(grading -2)
26.5	0	0	0.0	100.0	100
19	14	14	2.9	97.1	90-100
13.2	141	155	32.0	68.0	56-88
4.75	187	342	70.5	29.5	16-36
2.36	70	412	84.9	15.1	4-19
0.3	45	457	94.2	5.8	2-10
0.075	10	467	96.3	3.7	0-8

* The results obtained are satisfactory as per standard requirements.

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TEST RESULTS OF BITUMEN BINDAR CONTENT AND GRADATION FOR BC
IS 2386 (Part 1) 1963 (RA 2011)

Lab ID : CP-RW-2023-03-15-01

Date: 16-03-23

Project Name : Improvements and Restoration of Roads in Ward NO. 05 (Package 01) (Package Consists of 6 Works).

Agency : Sri.K.R Santhosh Kumar, No:4, Samrudhi, AVR Block 1st, A Main, Dhanalakshmi Layout, Virupakshapura, Bangalore-560097

Customer Reference : BBMP/EE/BTP/WO/48/2022-23

Date of Receipt : 15-03-23

Type of Mix : BC (Bituminous Concrete)

Source of Sample : Cars 24 Road

Date of test : 15-03-23

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	W1	500	500
2	Weight of the sample After extraction	W2	474	474
3	Initial weight of Paper	W3	4	4
4	Final weight of Paper	W4	6	6
5	Increase in weight of Filter Paper	W5=W4-W3	2	2
6	Bitumen percentage	$\frac{W1-W2+W5}{W1} \times 100$	5.60	5.60
7	Average percentage	%	5.6	

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Lab ID : CP-RW-2023-03-15-01 Date: 16-03-23

AFTER EXTRACTION - Trail-1

Total Weight of the Sample(gm) : 474

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	6	6	1.3	98.7	90-100
9.5	75	81	17.1	82.9	70-88
4.75	120	201	42.4	57.6	53-71
2.36	67	268	56.5	43.5	42-58
1.18	32	300	63.3	36.7	34-48
0.6	15	315	66.5	33.5	26-38
0.3	38	353	74.5	25.5	18-28
0.15	29	382	80.6	19.4	12-20
0.075	63	445	93.9	6.1	4-10

AFTER EXTRACTION - Trail-2

Total Weight of the Sample(gm) : 474

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	10	10	2.1	97.9	90-100
9.5	75	85	17.9	82.1	70-88
4.75	120	205	43.2	56.8	53-71
2.36	59	264	55.7	44.3	42-58
1.18	32	296	62.4	37.6	34-48
0.6	15	311	65.6	34.4	26-38
0.3	52	363	76.6	23.4	18-28
0.15	48	411	86.7	13.3	12-20
0.075	35	446	94.1	5.9	4-10

* The results obtained are satisfactory as per standard requirements.

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TEST RESULTS OF BITUMEN BINDAR CONTENT AND GRADATION FOR BC
IS 2386 (Part 1) 1963 (RA 2011)

Lab ID : CP-RW-2023-03-16-01 Date: 17-03-23

Project Name : Improvements and Restoration of Roads in Ward NO. 05 (Package 01) (Package Consists of 6 Works).

Agency : Sri.K.R Santhosh Kumar, No:4, Samrudhi, AVR Block 1st, A Main, Dhanalakshmi Layout, Virupakshapura, Bangalore-560097

Customer Reference : BBMP/EE/BTP/WO/48/2022-23

Date of Receipt : 16-03-23

Type of Mix : BC (Bituminous Concrete)

Source of Sample : Cars 24 Road

Date of test : 16-03-23

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	W1	500	500
2	Weight of the sample After extraction	W2	475	474.5
3	Initial weight of Paper	W3	4	4
4	Final weight of Paper	W4	6	6
5	Increase in weight of Filter Paper	W5=W4-W3	2	2
6	Bitumen percentage	$\frac{W1-W2+W5}{W1} \times 100$	5.40	5.50
7	Average percentage	%	5.45	

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ಬಿ.ಬಿ.ಎಂ.ಪಿ ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

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Lab ID : CP-RW-2023-03-16-01

Date: 17-03-23

AFTER EXTRACTION - Trail-1

Total Weight of the Sample(gm) : 475

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	4	4	0.8	99.2	90-100
9.5	62	66	13.9	86.1	70-88
4.75	112	178	37.5	62.5	53-71
2.36	88	266	56.0	44.0	42-58
1.18	29	295	62.1	37.9	34-48
0.6	11	306	64.4	35.6	26-38
0.3	46	352	74.1	25.9	18-28
0.15	45	397	83.6	16.4	12-20
0.075	55	452	95.2	4.8	4-10

AFTER EXTRACTION - Trail-2

Total Weight of the Sample(gm) : 474.5

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	4	4	0.8	99.2	90-100
9.5	62	66	13.9	86.1	70-88
4.75	112	178	37.5	62.5	53-71
2.36	88	266	56.1	43.9	42-58
1.18	29	295	62.2	37.8	34-48
0.6	11	306	64.5	35.5	26-38
0.3	46	352	74.2	25.8	18-28
0.15	45	397	83.7	16.3	12-20
0.075	50	447	94.2	5.8	4-10

* The results obtained are satisfactory as per standard requirements.

ಸಹಾಯಕ ಅಧೀಕ್ಷಕರು
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ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ, ಬೆಂಗಳೂರು-26

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